

## ATTACHMENT 2: FINANCIAL & RESOURCE IMPLICATIONS – ESTIMATED AVOIDED COSTS

The table below shows key financial investments made to deliver energy efficiency and emission reduction projects. Since the implementation of these projects, operational savings have been achieved from the ongoing costs avoided if the project was not to have occurred.

Please note, these avoided costs vary depending on scope and type of project. The table summarises the methodology in which these avoided costs have been calculated. Where data is not available, justification is provided for future consideration when developing the next Sustainability Strategy 2030 – *‘Taking Climate Action.’*

Project	Project Cost (\$)	Estimated annual avoided costs (\$)	Estimated 10-year avoided costs (\$) (no CPI, indicative only)	Annual GHG emission reduction (tonnes CO2-e)	Methodology and Justification
Energy Performance Contract energy efficiency measures installed at 8 Council buildings	\$2M	\$275,000	\$2.75M	1,428	<p>The estimated annual avoided costs (\$) is taken from the Detailed Facility Studies (DFS) completed as part of the business case issued in March 2019. Figures utilise 2017/18 energy rates.</p> <p>The primary benefit of the EPC is that the greenhouse gas (GHG) savings are ‘guaranteed’ by the contractor Ecosave. i.e. if the M&amp;V demonstrates that the projects implemented do not meet the GHG savings agreed on within reason and justification, Ecosave is required to deliver a project(s) that will cover the outstanding GHG savings equivalent.</p> <p>With the EPC, the M&amp;V period has been delayed to account for such COVID impacts. Therefore, making the M&amp;V status ‘ongoing’.</p>
Bulk Street Lighting upgrade to LED on local roads (785 lights)	\$644,000	\$110,000	\$1.39M (incl. VEECs)	332	<p>The estimated annual avoided costs (\$) is taken from the revised Project Scope and Summary Report. The estimated annual avoided cost (\$) is calculated from the 20-year cumulative net savings based on the life and performance of the new LED lights, 2017/18 energy rates and Australian Energy Market Operator (AEMO) forecasted data.</p> <p>Energy savings will be evident from FY 2022/23 in its entirety, as the upgrade will be completed by end of FY 2021/22.</p>

Decorative Street Lighting upgrade to LED on major and local roads (648 lights)	\$1.21M (LRCI fund program*)	\$43,500	\$435,000 (excl. VEECs TBD)	168	<p>The estimated annual avoided costs (\$) is taken from the Business Case. The estimated annual avoided cost (\$) is calculated from the 20-year cumulative net savings based on the life and performance of the new LED lights, 2017/18 energy rates and Australian Energy Market Operator (AEMO) forecasted data.</p> <p>Energy savings will be progressively evident from FY 2022/23, as the upgrade is currently being implemented.</p>
Total capacity of 266kW solar PV systems installed on Council and community buildings (FY16/17-20/21) excl EPC solar PV projects	\$261,470	\$74,527	\$745,273	353	<p>The majority of PV sites are sized appropriately based on day-time electricity load requirements and available roof space to reduce its energy consumption. There are minimal times where electricity generated from the solar PV systems on Council's buildings are fed back into the grid.</p> <p>Estimated annual avoided costs (\$) have been calculated for each system installed using the following formula:</p> <p>= Estimated annual solar generation (kWh) x average peak hour energy rate (\$/kWh) for FY 20/21</p> <p>Without the solar PV systems, this means Council would have spent the (accumulative) total estimated annual avoided cost (\$) to purchase electricity from the grid from FY 2021/22.</p> <p>Annual GHG savings are captured for Council's emissions reporting from the online solar PV portal that monitors Council's solar PV performance.</p>
2021/22 solar PV, LED, energy efficiency at multiple Council buildings (excluding EPC project)	\$358,120	\$49,230.40	\$492,304	222.3	<p>Estimated annual avoided cost (\$) of \$49,230.40 and annual GHG reduction of 222.3 is associated to the solar PV installations only (total 168.8kW solar PV capacity) based on the calculation as above with FY 21/22 average peak hour energy rate (\$/kWh).</p> <p>Other avoided costs from lighting and energy efficiency improvements (e.g. BMS upgrade) is not included as these costs are generally not calculated on a project by project basis. These improvements are made based on: the improved technology and efficiency of what is being upgraded; whether it has reached or is reaching its end-of-life for replacement; and takes into consideration the ongoing maintenance required for both what is being replaced and what is being replaced with.</p>

					<p>As part of the Facilities Maintenance program, gas appliances that are required to be replaced, are replaced with the most energy efficient electrical appliances, where applicable.</p> <p>Ongoing monitoring of these projects is challenging as:</p> <ul style="list-style-type: none"> <li>Electricity, gas and water consumption is taken from the site's utility invoices, not by function (e.g. lighting, heating and cooling, BMS etc).</li> <li>Sub-metering to capture consumption by functionality for each project implemented would be an added cost, taking into consideration the understanding as above.</li> </ul>
Utilities Management Program	\$259,321 over 4 yrs	Annual average of \$83,509 over 4 yrs	n/a	n/a	<p>Estimated annual avoided cost (\$) to the total of \$334,036 for the first 4 –years of implementing the Utilities Management Program include recovered costs from the following:</p> <ul style="list-style-type: none"> <li>Sewage disposal charges and sewage system charges</li> <li>Tariff reviews</li> <li>Duplicated system charges and double charging</li> <li>Historical estimated reads</li> <li>Compensation from utility retailers</li> <li>Other – Leak review and identification of non-council meters</li> </ul> <p>Avoided and recovered costs from this Program is expected to reduce compared to the initial stages of the Program as issues are rectified and maintained. The Utility Officer position contracted to deliver this Program provides consistent support across the organisation to ensure the ongoing maintenance of Council's utility meter inventory and mapping, monitoring and reporting of Council's utility consumption and GHG emissions profile.</p>